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The Commonwealth of Massachusetts

BUREAU OF STATISTICS
CHARLES F. GETTEMY, Director

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REPORT

OF A

SPECIAL INVESTIGATION

RELATIVE TO

THE SINKING FUNDS AND SERIAL LOANS OF THE CITIES AND TOWNS OF THE COMMONWEALTH

BY

THE DIRECTOR OF THE BUREAU OF STATISTICS

PURSUANT TO THE PROVISIONS OF CHAPTER 11, RESOLVES OF 1912

MARCH 5, 1913

BOSTON
WRIGHT & POTTER PRINTING COMPANY
STATE PRINTERS
1912

House Document No. 2162

The Commonwealth of Massachusetts.

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ending between November 30, 1910, and approximately April 1, 1911, it was thought best to utilize this material as the basis of the present report and not to incur expense in attempting to collect any considerable amount of additional information, which, while it would unquestionably serve a good purpose in bringing the data already at hand more nearly up to date, could not be expected to affect the principles involved or to modify the facts on which the report was to be based.

The results of this investigation may be embodied in two conclusions: —

(1) That the further establishment of sinking funds for the amortization of municipal indebtedness be prohibited and that all debt hereafter incurred be issued in accordance with the serial method, and

(2) That sinking fund commissioners and other officers concerned in the administration of sinking funds be required to carefully examine the basis upon which payments to such funds are being made, for the purpose of ascertaining whether the present rate of making contributions will adequately provide for paying the debt at maturity; and in case such provision is not being made, that immediate steps be taken for safeguarding the funds against a possible deficiency at the maturity of the debt for which they have been established.

I have not, however, deemed it necessary to present bills in this connection for the purpose of carrying out the above recommendations, as would be done under ordinary circumstances. The first suggestion merely fortifies, upon the basis of additional ascertained facts, the findings of the Special Report on Municipal Indebtedness made by me to the last Legislature and also of the Special Legislative Committee on Municipal Finance, and embodied in a bill reported by that committee, providing for the substitution hereafter of the serial for the sinking fund method of paying municipal indebtedness. This statement is also true of the second suggestion above made, which is covered by Section 8 of the proposed "Act Relative to Municipal Indebtedness" recommended by the Special Legislative Committee.[1]

By the terms of the resolve under which this report is made it was provided that the investigation should relate (1) to the sinking funds

[1] The portion of Section 8 of the Committee's bill referred to (House Doc. 1913, No. 1803, p. 72, lines 14-22) is as follows: —

"The auditor in cities, and the town accountant in towns having such an officer, and the treasurer in all other towns shall, not later than May first of each year, notify the board of assessors in writing of the amount of debt falling due during the current financial year, the sinking fund requirements, if any, and what provision has been made for meeting such requirements; and the board shall make such provision for meeting said debt and sinking fund requirements in the tax levy of said year as in its judgment may be necessary."

of the cities and towns of the Commonwealth and (2) to the outstanding loans of said cities and towns which have been issued on the serial payment plan. These two methods provided by our statutes for the amortization of municipal indebtedness will, therefore, be taken up separately.

I. Sinking Fund Debt.

The evils which the Municipal Indebtedness Act of 1875 sought to remedy were obviously: — (1) The creation of a fixed indebtedness resulting from loans originally issued in anticipation of taxes or for other temporary purposes; (2) the unrestricted incurrence of funded debt; and (3) the failure to make proper provision at the time of incurring debt for its payment at maturity. It is with the results of that portion of the Act of 1875 and its amendments which undertook to cope with the third of the evils mentioned that this report has to deal. The original act, Chapter 209 of the Acts of 1875, provided only one method for the payment of debt at maturity, namely, by the establishment of sinking funds, and it was not until seven years later that the law was amended so as to give municipalities the option of providing for the payment of debt by the serial plan. The provisions of the present law relating to the establishment of sinking funds and the restrictions under which, when established, they must be maintained, are to be found in the following sections of Chapter 27 of the Revised Laws: —

Section 12. The interest on all debts shall annually be raised by taxation. If a debt is payable at a period exceeding ten years, the city or town shall, and in all other cases may, at the time of contracting the same, establish a sinking fund to be used for no other purpose than the payment of such debt, and shall annually raise by taxation and contribute thereto an amount sufficient with its accumulations to extinguish the debt at maturity; and if payable at a period not exceeding ten years, the city or town shall raise by taxation annually not less than eight per cent of the principal thereof, and shall set it apart for a sinking fund until an amount has been raised sufficient with its accumulations to extinguish the debt at maturity; and shall, in the year before the maturity of the debt, raise by taxation, any balance necessary for its extinguishment.

Section 14. A town which establishes a sinking fund under the provisions of this chapter shall, at the time of establishing such fund, elect by ballot three or six commissioners of its sinking funds; and a city which establishes such a fund shall elect such commissioners by a concurrent vote of both branches of the city council. One-third of the number shall be elected for one, two and three years, respectively; and annually thereafter there shall be elected, for a term of three years, a number equal to the number whose term of service then

expires. In case of a vacancy, the remaining member or members shall exercise the powers of the board until the vacancy is filled. The city or town treasurer shall not be eligible as a commissioner, and the acceptance by a commissioner of the office of treasurer shall operate as a resignation of the former office. The foregoing provisions as to the mode of electing commissioners shall not apply to boards of sinking fund commissioners which were established before the thirteenth day of June in the year eighteen hundred and seventy-five. The commissioners shall choose a treasurer, who may be the city or town treasurer; and if the city or town treasurer is chosen, his bond shall apply to and include duties performed under the provisions of this chapter. If any other person is chosen treasurer, he shall give a bond, with sureties, to the satisfaction of the commissioners, for the proper performance of his official duties. They may also choose a secretary.

SECTION 15. The commissioners shall have charge of all sinking funds entrusted to them by the city or town and shall invest and re-invest, in the name of the board, all amounts contributed thereto and the income thereof as it accrues, in the particular bonds, notes or scrip for the redemption of which such sinking fund was established, or in other bonds of such city or town secured by sinking funds, or in temporary loan notes or certificates of their city or town issued in anticipation of taxes, or in securities, except personal securities, in which funds of savings banks may by law be invested; but no portion of the same shall be loaned to the city or town except as herein provided; and the commissioners may sell and re-invest such securities. They shall keep a record of their proceedings; and shall annually make a written report to the city or town of the amount and condition of said funds and of the income thereof for the preceding financial year. Their records and the securities belonging to said funds shall at all times be subject to the inspection of the mayor and aldermen, selectmen, or of any committee of the city or town authorized for the purpose. No member of the board shall receive compensation for his services, but the necessary expenses of the board shall be paid by the city or town; and the treasurer and secretary thereof shall receive such compensation as shall be fixed by the city or town.

When securities for the redemption of which a sinking fund has been established become a part of said sinking fund, the commissioners shall cause a notice to be stamped or written on the face thereof that they are a part of such sinking fund, and are not negotiable; and all coupons thereof, as they are paid, shall be cancelled.

SECTION 16. If, when bonds payable from the sinking fund become due, the commissioners of sinking funds of a city hold any other bonds of the city not due and payable, they shall so certify to the mayor and request that new bonds be issued to them by the city in lieu of the bonds not due. If the mayor is satisfied that there is occasion therefor, he shall cause new bonds to be prepared, bearing the same rate of interest, and payable as to principal and interest on the same dates as the bonds to be surrendered, and identical in terms therewith; and when executed by him and the city treasurer and approved by the committee on finance of the city council, they shall be issued to such commissioners on the surrender by them to the city treasurer and the cancellation of such former bonds. Such cancellation and new issue of bonds shall be entered in full on the books of the city treasurer.

SECTION 17. Cities and towns shall continue to contribute to every sinking fund which has once been established until such sinking fund with its accumulations shall be sufficient to extinguish at maturity the debt for which it was established.

SECTION 18. Cities and towns may pay, or provide for the payment of, any debts at earlier periods than is required in this chapter; or may renew or refund the same in securities payable within the required period; or may add to any sinking funds, for the purpose of reducing the entire debt for the redemption of which it was established or of reducing the amount to be raised by taxation for such funds, the excess of any appropriation over the amount required for the purpose thereof, or any other sums derived from taxation or from other sources, not required by law to be otherwise expended.

SECTION 22. If any city, except Boston, or any town pays a part of the expense of laying, maintaining and repairing the sewers under the provisions of section twenty-seven of chapter forty-nine, the amount required to be raised annually by taxation for a sinking fund to extinguish debts incurred for the construction of such system shall be estimated upon only the proportion of said indebtedness to be paid by such city or town, but if, after the expiration of two years from the date of such debts, the amounts received annually from assessments are not sufficient to create a sinking fund sufficient at maturity to extinguish the proportion of indebtedness to be paid by assessments, such city or town shall annually raise by taxation an amount sufficient to meet such deficiency of the preceding year.

SECTION 24. A city or town owing debts incurred in aid of a railroad corporation may, for the purpose of paying the same, establish a sinking fund, and may contribute thereto any amounts received from sales of the stock or securities of such corporations, or from dividends or interest upon the same, or from taxes voted for the payment of such debt; and may transfer the custody and management of such stock and securities to the commissioners of its sinking fund. Such city or town shall annually raise by taxation an amount sufficient, with the income, if any, derived from its stock or securities, to pay the interest on such debts; and the remedies provided by section twenty-six shall apply to proceedings under this section.

It will be noted from the provisions of Section 12, above quoted, that if a debt is payable at a period *exceeding 10 years*, it is stipulated that the city or town shall, unless it votes to provide for the payment of the debt by the serial method, so called, "*establish* a sinking fund to be used for no other purpose than the payment of such debt, and shall annually raise by taxation and contribute thereto *an amount sufficient with its accumulations to extinguish the debt at maturity.*" If, however, a debt is payable at a period *not exceeding 10 years*, the city

or town "shall raise by taxation annually *not less than eight per cent* of the principal thereof, and shall *set it apart* for a sinking fund until an amount has been raised sufficient with its accumulations to extinguish the debt at maturity; and shall in the year before the maturity of the debt, raise by taxation, any balance necessary for its extinguishment."

Thus, we have two forms of sinking funds authorized by law, one of which exists by virtue of being "established" and the other consisting of a fund which has been "set apart." While it may appear that there is no substantial difference between establishing a sinking fund and setting apart moneys to be used for such a fund, and that in ordinary usage these phrases are synonymous, the Legislature seems to have intended to make a certain distinction between the two, inasmuch as it provided that in case a sinking fund is *established* commissioners must be chosen to administer it, whereas it was apparently not deemed necessary to require the creation of a board of sinking fund commissioners for the administration of funds which were merely *set apart.* Whether this was the real intent of the Legislature or not such a distinction has been drawn and it has been held to be unnecessary in cases where a definite sum amounting to not less than eight per cent of the principal is set aside annually that commissioners should be chosen to manage the fund. But while the point has seemed worthy of mention in this connection, it need not be very seriously considered, for, as a matter of fact, it seems to have very rarely occurred that municipalities have adopted and adhered to the plan of setting apart not less than eight per cent of the principal annually, without creating a board of sinking fund commissioners, in preference to establishing a regular sinking fund to be administered by commissioners duly chosen for the purpose.

On the contrary, the practice has been much too common in our towns of neglecting altogether either to establish a sinking fund administered by commissioners or to set apart eight per cent of the principal annually for the payment of the debt at maturity even where the serial payment plan has not been adopted; that is to say, debt has been incurred by our towns to a lamentable extent *without any provision whatever* being made for distributing the burden of payment over the period for which the debt was incurred, either in the form of contributions to *bona fide* sinking funds duly established and properly administered, or by reducing the principal by annual payments on the serial plan. Such failure to make any provision in accordance with law for the payment

of debt was discussed with sufficient detail, I think, in my report on municipal indebtedness to the last Legislature [1] and does not appear to call for further elaboration here. The investigation of sinking funds covered by the present report has therefore been directed to a branch of the subject not hitherto gone into, namely, an attempt to determine to what extent our cities and towns which have purported to establish sinking funds in charge of commissioners under the law, have made annual contributions thereto so as to insure the accumulation of an amount sufficient to meet the respective debts at their maturity.

The total gross funded or fixed debt of the cities and towns of the Commonwealth at the close of the fiscal year corresponding most nearly to the calendar year 1910 was $238,592,264.82, of which $179,648,636.72 was of a character which may be described as sinking fund debt, *i.e.*, debt to be paid at maturity from the accumulations in funds established for the purpose. Of this amount $171,459,407.96 represented the indebtedness of 25 of the 33 cities payable from sinking funds and $8,189,228.76 represented the indebtedness of 60 of the 321 towns payable from sinking funds. Eight cities (Chicopee, Gloucester, North Adams, Pittsfield, Quincy, Salem, Somerville, and Woburn) have no sinking fund indebtedness, their outstanding fixed debt being all on the serial basis. Of the 261 towns having no sinking funds, 46 were without any funded or fixed debt, while the indebtedness of the remaining 215 was partly on a correct serial basis, partly represented by demand notes, and partly consisted of time loans issued without provision having been made for annual payments,[2] or liabilities created by the use of trust funds without written evidence of the same having been given. A table is here inserted showing for each of the 85 cities and towns of the Commonwealth having sinking funds the amount of outstanding sinking fund debt and the amount in the funds at the close of the fiscal year 1910 classified into two general groups, — debts for *General Purposes* and debts for *Public Service Enterprises*, including cemeteries.

[1] House Document 2168 of 1912.

[2] In certain instances, particularly in the case of water debt, the omission of provision for annual payments does not necessarily imply failure to comply with the provisions of law, for while contrary to the terms of the general statute governing municipal indebtedness, such omissions have frequently had the sanction of a special act.

Cities and Towns.	Aggregates		General		Public Service Enterprise	
	Debt Payable from Sinking Funds	Sinking Funds at End of Fiscal Year 1910	Debt Payable from Sinking Funds	Sinking Funds at End of Fiscal Year 1910	Debt Payable from Sinking Funds	Sinking Funds at End of Fiscal Year 1910
Adams,	$50,000.00	$4,084.67	$50,000.00	$4,084.67	–	–
Agawam,	25,000 00	20,761.38	25,000.00	20,761.38	–	–
Amesbury,	25,000.00	10,915.37	25,000.00	10,915.37	–	–
Amherst,	50,000 00	33,564.90	50,000.00	33,564.90	–	–
Andover,	101,000.00	40,832.54	51,000.00	18,020.33	$50,000.00	$22,812.21
Arlington,	560,100.00	176,195.58	244,100.00	56,366.64	316,000.00	119,828.94
Athol,	110,200.00	35,804.95	110,200.00	35,804.95	–	–
Attleborough,	557,000.00	127,745.88	70,000.00	39,271.63	487,000.00	88,474.25
Ayer,	53,000.00	14,868.04	–	–	53,000.00	14,868.04
Belmont,	173,000.00	54,574.02	123,000.00	39,677.96	50,000.00	14,896.06
Beverly,	943,000.00	877,411.16	443,000.00	434,934.91	500,000.00	442,476.25
Billerica,	145,000.00	54,236.74	55,000.00	27,220.74	90,000.00	27,016.00
Boston,	106,953,906.00	39,530,390.02	[1] 85,886,706.00	[2] 34,226,646.42	21,067,200.00	[3] 5,303,743.60
Braintree,	272,500.00	169,740.97	–	–	272,500.00	169,740.97
Brockton,	1,450,000.00	571,837.45	–	–	1,450,000.00	571,837.45
Buckland,	15,000.00	3,897.71	15,000.00	3,897.71	–	–
Cambridge,	11,245,150.00	3,680,272.35	8,185,050.00	2,111,262.86	3,060,100.00	1,569,009.49
Carlisle,	500.00	102.67	500.00	102.67	–	–
Chelsea,	2,724,500.00	1,212,171.00	2,424,500.00	1,058,900.00	300,000.00	153,271.00
Clinton,	309,000.00	174,200.06	175,000.00	93,616.70	134,000.00	80,583.36

Concord,	373,000.00	53,983.94	102,000.00	23,570.20	271,000.00	30,413.74
Danvers,	255,900.00	30,247.43	10,000.00	6,942.24	245,900.00	23,305.19
Erving,	6,000.00	2,950.90	6,000.00	2,950.90	–	–
Everett,	875,000.00	409,731.81	675,000.00	288,498.68	200,000.00	121,233.13
Fall River,	6,119,250.00	2,341,641.42	4,869,250.00	1,910,689.85	1,250,000.00	430,951.57
Falmouth,	10,000.00	5,562.72	10,000.00	5,562.72	–	–
Fitchburg,	977,000.00	506,275.56	510,000.00	338,457.20	467,000.00	167,818.36
Framingham,	145,000.00	51,598.34	–	–	145,000.00	51,598.34
Great Barrington,	42,000.00	19,511.98	42,000.00	19,511.98	–	–
Groveland,	2,500.00	1,299.01	–	–	[4] 2,500.00	[4] 1,299.01
Hatfield,	50,000.00	16,009.61	–	–	50,000.00	16,009.61
Haverhill,	1,775,000.00	611,471.35	875,000.00	191,185.68	900,000.00	420,285.67
Holbrook,	112,000.00	59,293.95	–	–	112,000.00	59,293.95
Holyoke,	1,049,000.00	443,198.21	699,000.00	299,032.71	350,000.00	144,165.50
Hopkinton,	35,800.00	9,154.26	20,000.00	3,096.26	15,800.00	6,058.00
Hull,	215,421.88	146,919.61	129,421.88	77,796.30	[5] 86,000.00	[6] 69,123.31
Ipswich,	160,000.00	54,509.91	–	–	160,000.00	54,509.91
Lawrence,	974,000.00	206,523.98	262,000.00	133,201.43	712,000.00	73,322.55
Leominster,	558,700.00	158,903.05	356,700.00	137,437.60	202,000.00	21,465.45
Lincoln,	70,000.00	13,312.71	–	–	70,000.00	13,312.71
Longmeadow,	30,000.00	11,723.21	–	–	30,000.00	11,723.21
Lowell,	1,875,000.00	1,030,189.95	800,000.00	404,816.91	1,075,000.00	625,373.04

[1] Includes $142,000 for cemeteries.

[2] Includes sinking funds created for meeting debt on account of ferries, $198,000; markets, $20,000; and cemeteries, $142,000.

[3] Includes $2,941,734.55 water, $2,194,477.42 rapid transit, and $167,531.63 ferries. Sinking funds created for meeting debt on account of ferries, $198,000 and markets, $20,000 are included in sinking funds for general debt.

[4] For cemeteries.

[5] Includes $1,000 for cemeteries.

[6] Includes $400 for cemeteries.

Cities and Towns.	Aggregates		General		Public Service Enterprise	
	Debt Payable from Sinking Funds	Sinking Funds at End of Fiscal Year 1910	Debt Payable from Sinking Funds	Sinking Funds at End of Fiscal Year 1910	Debt Payable from Sinking Funds	Sinking Funds at End of Fiscal Year 1910
Lynn,	$3,853,100.00	$1,278,582.31	$2,204,600.00	$710,302.00	$1,648,500.00	$568,280.31
Malden,	1,333,000.00	596,564.66	985,000.00	310,338.23	348,000.00	286,226.43
Mansfield,	100,000.00	33,445.02	50,000.00	26,026.71	50,000.00	7,418.31
Marblehead,	50,000.00	20,607.86	–	–	50,000.00	20,607.86
Marlborough,	870,000.00	611,283.67	350,000.00	297,304.31	520,000.00	313,979.36
Maynard,	125,000.00	54,095.06	–	–	125,000.00	54,095.06
Medford,	1,642,976.96	1,076,142.95	1,441,976.96	868,236.32	[1] 201,000.00	[2] 207,906.63
Melrose,	1,018,000.00	577,407.52	818,000.00	417,673.36	200,000.00	159,734.16
Methuen,	246,700.00	90,036.36	71,700.00	25,000.23	175,000.00	65,036.13
Millis,	30,000.00	13,827.59	–	–	30,000.00	13,827.59
Natick,	464,365.00	51,160.68	314,665.00	43,080.52	149,700.00	8,080.16
New Bedford,	4,607,000.00	1,873,676.26	3,137,000.00	1,267,749.56	1,470,000.00	605,926.70
Newburyport,	415,500.00	231,570.84	415,500.00	231,570.84	–	–
Newton,	5,149,200.00	2,621,772.64	3,964,200.00	2,059,548.40	1,185,000.00	562,224.24
Northampton,	67,000.00	52,056.09	67,000.00	52,056.09	–	–
North Andover,	120,000.00	50,764.98	–	–	120,000.00	50,764.98
North Attleborough,	192,500.00	87,215.36	15,500.00	4,239.43	177,000.00	82,975.93
Norwood,	54,000.00	34,502.13	–	–	54,000.00	34,502.13
Peabody,	40,000.00	19,278.37	–	–	40,000.00	19,278.37
Randolph,	123,100.00	65,169.45	–	–	123,100.00	65,169.45

Saugus,	25,000.00	15,005.41	25,000.00	15,005.41	–	–
Sharon,	5,000.00	4,134.46	5,000.00	4,134.46	–	–
Shelburne,	15,000.00	8,959.57	15,000.00	8,959.57	–	–
Southbridge,	50,000.00	20,819.84	50,000.00	20,819.84	–	–
South Hadley,	44,000.00	16,532.21	44,000.00	16,532.21	–	–
Southwick, [3]	2,541.88	726.68	2,541.88	726.68	–	–
Spencer,	240,000.00	213,516.62	–	–	240,000.00	213,516.62
Springfield,	2,240,000.00	842,991.90	1,765,000.00	661,763.27	475,000.00	181,228.63
Swampscott,	150,000.00	47,491.83	–	–	150,000.00	47,491.83
Swansea,	11,500.00	4,100.00	11,500.00	4,100.00	–	–
Taunton,	2,282,200.00	902,827.61	1,116,200.00	430,402.62	1,166,000.00	472,424.99
Waltham,	991,000.00	635,225.81	[4] 617,000.00	[5] 348,129.09	374,000.00	287,096.72
Wayland,	53,000.00	33,174.29	42,000.00	23,101.69	11,000.00	10,072.60
Webster,	104,400.00	58,306.80	–	–	104,400.00	58,306.80
Wellesley,	209,000.00	156,286.11	–	–	209,000.00	156,286.11
Wellfleet,	10,000.00	9,532.95	10,000.00	9,532.95	–	–
Westborough,	123,000.00	33,131.09	71,000.00	23,740.83	52,000.00	9,390.26
West Springfield,	365,500.00	72,225.79	100,000.00	15,225.79	265,500.00	57,000.00
Weymouth,	543,000.00	314,927.32	40,000.00	6,201.60	503,000.00	308,725.72
Whitman,	120,000.00	77,453.70	–	–	120,000.00	77,453.70
Williamsburg,	50,000.00	7,746.73	–	–	50,000.00	7,746.73
Wilmington,	10,000.00	7,709.74	10,000.00	7,709.74	–	–
Worcester,	10,029,625.00	4,120,404.98	6,179,625.00	2,202,126.03	3,850,000.00	1,918,278.95
Totals,	$179,648,636.72	$70,020,011.61	$131,238,436.72	$52,169,138.28	$48,410,200.00	$17,850,873.33

[1] Includes $18,000 for cemeteries.
[2] Includes $16,331.12 for cemeteries.
[3] Demand notes.
[4] Includes $5,000 for cemeteries.
[5] Includes sinking funds created for meeting debt on account of cemeteries, $5,000.

From this table it is seen that of the 25 cities having sinking funds, 24 (all but Brockton) have sinking funds for loans for *General Purposes;* 23 (all but Northampton and Newburyport) have sinking funds for loans for *Public Service Enterprises;* while three — Boston, Waltham, and Medford — have sinking funds for loans for *Cemeteries.* The following 19 towns have sinking funds for loans for *General Purposes* and *Public Service Enterprises:* —

Leominster	Andover
Attleborough	Concord
Clinton	Belmont
Weymouth	Westborough
Methuen	Mansfield
Arlington	Billerica
Natick	Hopkinton
North Attleborough	Wayland
Danvers	Hull
West Springfield	

The following towns have sinking funds for loans for *Public Service Enterprises* but not for *General Purposes:* —

Peabody	North Andover
Framingham	Wellesley
Webster	Randolph
Braintree	Holbrook
Norwood	Ayer
Marblehead	Williamsburg
Whitman	Hatfield
Spencer	Millis
Maynard	Lincoln
Swampscott	Longmeadow
Ipswich	

The following towns have sinking funds for loans for *General Purposes* but not for *Public Service Enterprises:* —

Adams	Sharon
Southbridge	Swansea
Amesbury	Wilmington
Athol	Buckland
Saugus	Shelburne
Great Barrington	Erving
Amherst	Wellfleet
South Hadley	Southwick
Agawam	Carlisle
Falmouth	

Two towns have sinking funds for loans for *Cemeteries,* namely, Groveland and Hull.

In Southwick, the debt is represented by demand notes which, while they may run indefinitely, are, nevertheless, always due and payable. It is difficult to conceive of a sinking fund in any proper sense of the term being established to meet a demand note, but this fund has been so reported by the town and has been included in the above list, there being apparently some sort of fund in which a few hundred dollars have been accumulated to apply on the debt.

The Massachusetts law specifies the percentage of the principal that must be set aside annually to meet a loan running for a period of ten years or less (eight per cent), while if the loan is for a period longer than ten years, the city or town is permitted to decide the amount that it shall annually set aside until the last year, when enough shall be raised to meet any balance of the loan not provided for. But upon examination of the figures returned to the Bureau, it was found that the contributions made to sinking funds were, in many cases, based upon no definite, regular formula, the amounts which should be raised annually having never apparently been systematically calculated, or if calculated at any time, had not been re-calculated with sufficient frequency to meet current requirements accurately. In other cases, where the annual payments were calculated on a scientific basis, different rates were used in the various municipalities.

The purpose of this investigation at the outset, therefore, was to determine, if possible, the extent to which our cities and towns were actually making an annual contribution to their sinking funds sufficient to meet the debt at maturity, and to point out the cases of failure to make adequate provision and the resulting deficits and, likewise, the cases where such abnormal contributions had been made as to cause a surplus out of proportion to reasonable requirements. But it was found to be impracticable, for reasons which will presently appear, to carry out this purpose in such a way as to make possible a definite statement of actual deficiencies at the present time in the funds of those cities and towns which were found, *in accordance with the plan of computation adopted,* not to have made proper provision in the past for meeting the requirements of the funds. That is to say, in undertaking to compute on a scientific basis the requirements of some 1,200 different

funds of 84 cities[1] and towns which were figured, it was necessary, as a practical matter within the limitations of the appropriation, time, and facilities available for the investigation, to adopt certain arbitrary rules as a basis for procedure. It was accordingly decided: —

1. To make the calculations for the funds of the several cities and towns on the same basis.

2. To disregard temporary exemptions from the general statutes which may have been granted by special legislation in certain cases, and also to disregard the eight per cent requirement on loans under ten years.

3. To disregard contributions made to sinking funds from certain revenues other than taxation (premiums, etc.).

4. To base the computations on the assumption that the funds should earn $3\frac{1}{2}$ per cent annually (this being deemed a conservative figure as the basis of a uniform computation), and in so doing, when the period elapsed was other than a full number of years, to disregard three months or less, and to consider nine months and over three months as half a year, and over nine months as a full year.

5. To calculate payments to sinking funds as being made *at the end of the fiscal year*. In this connection it may be contended that payments should be made on the anniversary date of the loan and that on loans for ten years and under the first contribution should be made at the time the loan is issued, both of these plans being actually in use. Nevertheless, by the method adopted an approximate figure has been arrived at which, it is believed, represents the minimum amount that should be in the fund. In those cities and towns where payments are made at the beginning of the year, they would necessarily, if figured on a scientific basis, amount to more than the sums resulting from our calculations.

To these rules of procedure, which it was found practically necessary to adopt, one other consideration must be added, namely, the fact that while the amounts which had been actually accumulated in the sinking funds at the close of the fiscal year for which data were at hand, were figures of record already on file in the Bureau of Statistics, *the dates and amounts contributed to the funds at each date since their establishment* were lacking on our schedules and in many instances probably could

[1] For the immediate purposes of this inquiry, it was not deemed necessary to compute the requirements of the sinking funds of Boston, some 800 in all, since it is known that they are carefully figured each year by the City Auditor and the City Treasurer independently, and on a conservative basis.

not have been obtained without considerable research and expense. It was, therefore, quite possible, — and in certain cases we knew it to be a fact, — that the deficiencies which would otherwise now actually exist in certain funds by virtue of failure to make sufficient contributions to them in the early part of the period of the loan, are in process of being wiped out at the present time because of the generous contributions made in recent years, or after it had been discovered that the rate at which payments to the fund had hitherto been made would not be sufficient to pay the debt at maturity. But while in such cases the taxpayers of the present and future must be the victims of inefficient sinking fund administration in the past, — in that it is necessary to call upon them to meet not only their own just obligations, but those for which their predecessors have been allowed to escape, — the only proper course for remedying the situation under the circumstances has already been adopted.

For these reasons, I feel that a grave injustice might be done were the impression to go abroad that the deficits in sinking funds, as indicated by mathematical calculations made on a uniform basis for all sinking fund debt, were in all cases actual deficits. The results of these calculations are not, accordingly, given in detail in this report, but taking them as they stand and bearing in mind the conditions under which they were computed, it may be said that 52 instances in 40 different cities and towns were found of *apparent* failure to provide sufficiently for sinking fund requirements (some municipalities having apparent deficits in certain funds and surpluses in others), and that the net deficiencies, according to the method of computation adopted, were found to aggregate $1,794,391.58, of which $1,214,349.47 was in the cities and $580,042.11 in the towns; on the other hand, of the 85 cities and towns having sinking funds, 47 showed a net surplus aggregating $2,855,192.37, of which $2,633,126.53 was in the sinking funds of cities, and $222,065.84 in the sinking funds of towns. The 52 instances of apparent failure to make adequate contributions to funds were distributed among loans for *General Purposes* in four cities and 15 towns, for *Public Service Enterprises* in nine cities and 23 towns, and for *Cemetery* purposes in one town. Of the towns in the list there are 10 in which the apparent deficit is less than $2,300 (the range being from $37.17 to $2,250.50), — amounts so small as to indicate that they should not be made the subject of exaggerated attention, since in most cases the balance required to meet the maturing debt could readily be raised from taxation without materially affecting the rate.

But while, as already explained, it is known that abnormal contributions are now being made to sinking funds in certain instances in order to make up for loose and imprudent management in the past, we have not been able to ascertain within the time and with the facilities available for this inquiry the number of such cases, nor to what extent well-meant efforts to reform the situation are likely to be permanently effective in accomplishing their purpose. On the other hand, it is quite certain that in a large number of cases no such efforts have as yet been made, if, indeed, the real situation is at all appreciated. It is, therefore, pertinent to point out some of the causes contributory to the shortages which undoubtedly exist in many of the sinking funds of our Massachusetts cities and towns. These are principally as follows: —

(1) *Failure to make sufficient annual appropriations.* This is often due to a general plan of pledging revenues from certain specified sources and surpluses of general revenue to meet the sinking fund requirements, it being subsequently found that the anticipated revenue is not forthcoming, and that to raise the necessary amount, under the circumstances, would call for a direct tax; anticipating, however, that at some future time there may be sufficient revenue to make up the deficit, one administration passes it along to the next, which, in turn, rather than meet not only its own but its predecessors' obligations, finds it easier to allow the deficit to continue and to pass it on again; — so that eventually there must result a refunding of the debt. It is probable that many of the officials of our cities and towns do not realize the fact of a deficiency in the sinking fund, for so long as there is sufficient cash in the various funds in the aggregate to meet any one maturing loan, they fail to appreciate that there may not be enough money to meet the requirements of all of the several loans at their maturity, — a condition easily demonstrated by a calculation based upon a scientific rule showing the requirements of each separate fund at a given time.

(2) *Danger of loss from investments.* This is something to be feared, not, perhaps, so much on account of poor investments as from investment in securities maturing at a date subsequent to the date of maturity of the loan, thereby forcing the sale of such securities at market value in order to secure sufficient cash to retire the bonds at maturity.

(3) *Temptation to engage in public improvements in advance of the needs of the times.* This condition frequently results from the delusion that the sinking fund has some mysterious efficacy whereby a debt

may be paid without the burden being greatly felt by the present or future generations. The annual requirement by the sinking fund method for liquidating the debt, if the interest charges be ignored, seems to be less than if the debt be made payable by the serial method; but the fallacy of closing one's eyes to the significance and costliness of the interest burden carried over a long period of years ought to be apparent.

In some of the municipalities a deficit in sinking funds is also created by the use of moneys in the sinking fund for the purchase and cancellation of bonds before maturity, without increasing the annual appropriations to offset the loss of earnings of the fund. Still another plan followed is the issue of loans for, say, 20 years, which may be called in 10 years. While a municipality thus handling its debt and operating on what might be termed a sinking fund and periodical payment method would, perhaps, have a sufficient sum in the sinking fund to meet the debt at maturity, nevertheless in figuring on a correct sinking fund basis at a given date without taking into account loans paid before maturity, the results show a deficit, and it has, therefore, been the policy of the Bureau of Statistics to follow the law, as we understand it, and the practice of the best accountants.

Having pointed out some of the ways whereby deficits in the sinking funds of certain municipalities may be shown by computing their requirements on a strictly scientific basis, it should also be noted that by the same method we have found surpluses in other cases quite different from those shown by the local financial officers. If, for example, the treasurer makes his payments to the sinking fund at the beginning, instead of at the close, of the year, and credits premiums and other moneys received from some unexpected source to the sinking fund, the effect is a change in the required amount of the annual contributions during the time for which the loan is to run.

In order that a sinking fund may be accumulated on as nearly an equitable basis as possible, we must start on an estimated earning power which will give us, not only the estimated amount of the fund at any given time, but the annual requirement. If the actual amount in the fund is more or less than the requirement, as calculated, we should sink this amount for the remainder of the period the loan is to run; by deducting this from the total of the loan, we have a new principal which is to be sunk during the remainder of the period, and the balance should then be reapportioned. By repeating this process annually, we

absolutely guarantee the extinguishment of the debt on as nearly an equitable basis as is possible. The necessity of such a method is demonstrated where a large premium is received and paid into the sinking fund, or where real estate is sold and the proceeds used for sinking fund requirements. It is not right that the taxpayers of any one year should receive all the benefit of such accruals to the fund, and the administration temporarily in office a corresponding fictitious credit; the amounts should be spread and the balance apportioned as suggested.

In theory, the sinking fund is a financial arrangement whereby debt may be redeemed or extinguished by setting aside annually a certain sum which is invested and allowed to accumulate until the various contributions, together with their earnings, are sufficient to retire the debt at a certain fixed date. If, therefore, (1) it were possible to determine in advance and with mathematical exactness the earnings of the investments, — and if (2) there could be an absolute guarantee that the remainder of the amount necessary to provide the fund with sufficient cash to meet the debt at maturity would be provided annually from revenue, the sinking fund would form a perfect proportionate method of providing for the extinguishment of debt. Unfortunately, however, these conditions, upon which the successful administration of sinking funds depends, are seldom met, and can only be approximated at best by most careful computation and skilful financiering.

This supplementary investigation, in which special attention has been given to the condition of the sinking funds of our cities and towns, has served only to furnish cumulative and more detailed evidence in support of the position taken in the more comprehensive report on Municipal Indebtedness in Massachusetts made by me to the Legislature of 1912 (published as House Document No. 2168), and I cannot express the conclusion reached as the result of these two investigations better than it was stated in that report: — "A sinking fund, however well it may be administered, is at best a cumbersome means of accomplishing the desired end, since it involves not only the obligation to keep the funds properly invested, but complicated, mathematical computations to insure equitable assessments upon the taxpayers during the period of the loan in order that the debt may be paid at maturity; and the evidence is abundant of the establishment of sinking funds by our Massachusetts cities and towns, doubtless in good faith, to which proper contributions have not been made from year to year, with the result that upon the maturity of the loans these funds are found to be far short of the amount necessary to pay the debt, with extension by refunding as the inevitable result."

II. Serial Debt.

When the Legislature required the establishment of sinking funds for the purpose of meeting maturing obligations, it adopted the plan which had generally been approved by public financiers for upwards of a century for providing systematically for the amortization of debt. But the serial method soon after began to find favor and by 1882 had obtained sufficient popularity to justify the Legislature in passing an act (Chapter 133, Acts of 1882) permitting cities and towns, if they so desired, to provide for the payment of debt by annual proportionate payments of the principal instead of by the method of making contributions to a sinking fund. This act was as follows: —

Section 1. Any city or town required by chapter twenty-nine of the Public Statutes to establish a sinking fund for the payment of its indebtedness may, instead thereof, by a majority vote provide for the payment of such indebtedness in such annual proportionate payments as will extinguish the same within the time prescribed in said chapter; and when such vote has been heretofore or shall be hereafter passed, the amount required thereby shall, without further vote, be assessed by the assessors in each year thereafter, until the debt shall be extinguished, in the same manner as other taxes are assessed under the provisions of section thirty-four of chapter eleven of the Public Statutes.

Section 2. The return required by section ninety-one of chapter eleven of the Public Statutes shall state the amount of any sinking fund established, and if not so established whether action has been taken in accordance with the provisions of the preceding section and the amounts raised and applied thereunder for the current year.

Section 3. This act shall take effect upon its passage. [*Approved March 30, 1882.*

When the statutes were codified by the Legislature of 1901, Section 1 of the above act was, without material change, incorporated into and became Section 13 of Chapter 27, Revised Laws. It was amended further in 1908 by Chapter 341 of the Acts of that year by the insertion of the words "proportionate or other annual" in place of the words "annual proportionate," and by inserting a further provision to the effect that the amount of annual payments in any year and the whole interest of the debt payable in the same year should not together be less than the aggregate amount of principal and interest payable in

any subsequent year; and other necessary, minor, verbal changes were also made. The act was again amended by Chapter 350, Acts of 1911, so that the present law, Section 13, Chapter 27, R. L., as amended, now stands: —

> A city or town, instead of establishing a sinking fund, may vote to provide for the payment of any debt by such proportionate or other annual payments as will extinguish the same at maturity, but so that the amount of such annual payment in any year and the whole interest of such debt, so far as issued, payable in the same year shall not together be less than the aggregate amount of principal and interest payable in any subsequent year, and thereupon such annual amount shall, without further vote, be assessed under the provisions of section thirty-seven of chapter twelve until such debt is extinguished.

Under our Massachusetts law, therefore, the payment of debt by the serial method means, briefly, its payment in such proportionate or other annual instalments as will extinguish it at maturity, and I believe that the word "annual" in this connection should be interpreted as meaning that payments must begin in the year following the incurrence of the debt and that the law is not complied with when the first payment is postponed to a date later than one year from the date of issue of the loan, even though annual payments may be made thereafter; much less can I conceive annual payments to have been provided for when by the plan adopted for cancelling the indebtedness, a payment in some one year of the period is to be omitted.

The statute, thus, in my judgment, contemplates continuous annual payments, beginning not later than one year from the date of issue, although it has seemed to me that if the first payment were to be made in less than a year, with payments thereafter on the anniversary dates, the intent and spirit of the law would be complied with. This view seems to be clearly substantiated by the requirement that the annual payment of principal and the whole interest of the debt so far as issued payable in any one year shall not together be less than the aggregate amount of principal and interest payable in any subsequent year, so that in choosing to distribute the debt burden equally over the years constituting the period of the loan, a municipality may spread the payments so that they will mature on a descending rather than an ascending scale; and it is certain that failure to recognize the wisdom of this policy is likely to spell financial disaster sooner or later, since experience has proved that the taxpayers of each generation have sufficient

burdens of their own to bear without being obliged to carry those of their predecessors.

It appears to be the duty of the assessors to provide in the tax levy each year for raising the amounts annually required to meet debt maturing under the serial method, whether appropriations have been made for the same or not, the assessors being required to include in the aggregate amount assessed "all amounts which are required by law to be raised by taxation."[1] But, as has already been pointed out, there are many instances of municipalities which have made no provision for the payment of debt either by the establishment of sinking funds or by the serial method and, indeed, have ignored altogether in this respect the restrictions provided by law under which debt may be incurred.[2]

But when ostensibly adopting a plan of serial payments, such payments in numerous cases, in my opinion, have not been made in regular proportionate amounts as required by law, and sometimes annual payments have been omitted altogether. These evasions of the serial payment provisions of the general law, where no sinking funds have been established, have occurred chiefly in the towns and have taken the form of the issuance of notes, the principal of which has been made payable some years subsequent to the date of issue, no annual payments being contemplated, or the first partial payment being postponed more than one year from the date of issue. It is no longer possible, however, for towns to issue so-called serial debt in this manner *in the form of notes*, since a method has now been provided for enforcing the serial payment provisions of the law in so far as town notes are concerned. This is done automatically by the refusal of the Director of the Bureau of Statistics, acting under the provisions of Chapter 616, Acts of 1910, and amendments, to certify such notes. But there is no adequate means provided by statute at the present time for enforcing the law regarding the issue of debt by the serial method *by cities*, nor when the same takes the form of *bonds* in *towns*, since the only form of debt the issue of which falls under the direct supervision of the Director of the Bureau of Statistics is that which is evidenced by *notes of towns*.

As a matter of fact, however, our cities issue few notes, except for purely temporary loans, their serial debt being in the form of bonds

[1] Acts of 1909, Part I, Chapter 490, Sec. 37.

[2] See Report of a Special Investigation Relative to the Indebtedness of the Cities and Towns of the Commonwealth, House Document No. 2168 of the year 1912.

and the purchasers of city and town bonds, in the absence of certification by a state authority, now appear to cause them to be properly examined with increasing care. The bad practices in connection with the incurrence of this form of debt, which prevailed all too widely up to within a few years ago and under which some of our municipalities are still suffering, may therefore be said to be in process of correction so far as respects town notes through the natural operation of the town note certification act, and so far as municipal bonds are concerned by the influence of public opinion and banking requirements. There is, nevertheless, an occasional lapse from complete conformity with the laws requiring proportionate payments to be made of the principal of debt other than that provided for by sinking funds, such as would certainly be discouraged if not prevented by an explicit definition of the word "proportionate" when used in this connection, or better still, by its omission altogether.

An instance of what seems to me a plain subversion of the intent of the statute in this particular has recently occurred. A town which had been given authority by the Legislature to incur a debt of $55,000, with the proviso that annual proportionate payments of the same should be made, provided for the issue of bonds in such a manner that $5,000 of the entire amount was made payable $1,000 annually during the first five years of the period for which the debt was to run, while the remainder was to be payable at the rate of $2,000 annually. The entire period for which the debt was authorized was 30 years. In other words, it was arranged to pay $\frac{1}{11}$ in the first five years at a rate of $1,000 annually and $\frac{2}{11}$ during the remaining 25 years at the rate of $2,000 annually. Had the statute permitted the issue of notes instead of bonds for this loan and had notes made to mature in the manner indicated been presented to me for certification, I should have felt obliged to refuse to certify the same on the ground that the payments as proposed were not, in my opinion, proportionate, and therefore not in accordance with the statute authorizing the debt; but being issued in the form of bonds, the loan did not fall within the certifying authority of the Director of the Bureau of Statistics, and the town had no difficulty in disposing of the first instalment of bonds sold under the act, amounting to $40,000. If the word "proportionate," when used in this connection, can properly be construed as it was in this case, it seems to me that it serves no useful purpose and should be eliminated from the general law and its incorporation in the provisions of special

acts discontinued. While the point involved is somewhat technical, it is of sufficient importance to merit careful consideration by the Legislature.

Conclusion.

The data on which this report is based only serve to further emphasize the desirability of legislation which will put a stop to the further establishment of sinking funds by the cities and towns of the Commonwealth under the general law and require all municipal indebtedness hereafter incurred to be issued by the serial payment method. Such legislation would cause all our municipal indebtedness to be issued upon the same salutary and equitable basis as that already adopted by the Commonwealth and by numerous individual municipalities. As to sinking funds already established, the various provisions of law intended to safeguard their management should, of course, continue in force pending the payment of the debts for which they were severally established, but the cities and towns having such funds and not making annual contributions to them sufficient to meet the debt at maturity, should be required to begin immediately to make such provision.

Respectfully submitted,

CHARLES F. GETTEMY,
Director, Bureau of Statistics.

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